UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte BIN YU

Appeal No. 2005-0736
Application No. 09/476,961

ON BRIEF

Before RUGGIERO, BARRY, and LEVY, Administrative Patent Judges.

RUGGIERO, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on the appeal from the final rejection of claims 18, 21-25, and 28-37. At page 8 of the Answer, the Examiner indicates the allowability of claim 36 and, accordingly, only the rejection of claims 18, 21-25, 28-35, and 37 is before us on appeal.

The claimed invention relates to an integrated circuit including a plurality of field effect transistors in which each transistor includes a gate, deep source and drain regions, and source and drain extensions. The source and drain extensions are

integral with the deep source and deep drain regions, respectively, with the drain extension being deeper than the source extension.

Claim 18 is illustrative of the invention and reads as follows:

> 18. An integrated circuit including a plurality of field effect transistors, each of the transistors comprising:
>
> a gate structure disposed over a channel;
>
> a deep source region heavily doped with dopants of a first conductivity type;
>
> a deep drain region heavily doped with dopants of the first conductivity type;
>
> a source extension integral the deep source region; and
>
> a drain extension integral the deep drain region, wherein the drain extension is deeper than the source extension.

The Examiner relies on the following prior art:

Miller	5,625,216	Apr. 29, 1997
Kadosh et al. (Kadosh)	5,677,224	Oct. 14, 1997

Claims 18, 21-25, 28-35, and 37, all of the appealed claims, stand finally rejected under 35 U.S.C. § 103(a) as being unpatentable over Kadosh in view of Miller.

Rather than reiterate the arguments of Appellant and the Examiner, reference is made to the Briefs[1] and Answer for the respective details.

OPINION

We have carefully considered the subject matter on appeal, the rejection advanced by the Examiner, the arguments in support of the rejection, and the evidence of obviousness relied upon by the Examiner as support for the rejection. We have, likewise, reviewed and taken into consideration, in reaching our decision, Appellant's arguments set forth in the Briefs along with the Examiner's rationale in support of the rejection and arguments in rebuttal set forth in the Examiner's Answer.

It is our view, after consideration of the record before us, that the evidence relied upon and the level of skill in the particular art would have suggested to one of ordinary skill in the art the invention as set forth in claims 18, 21-25, 28-35, and 37. Accordingly, we affirm.

Appellant's arguments in response to the Examiner's rejection of the appealed claims are organized according to a

[1] The Appeal Brief was filed January 27, 2004. In response to the Examiner's Answer mailed July 14, 2004, a Reply Brief was filed September 14, 2004, which was acknowledged and entered by the Examiner as indicated in the communication mailed November 24, 2004.

suggested grouping of claims indicated at page 3 of the Brief. We will consider the appealed claims separately only to the extent separate arguments for patentability are presented. Any dependent claim not separately argued will stand or fall with its base claim. Note In re King, 801 F.2d 1324, 1325, 231 USPQ 136, 137 (Fed. Cir. 1986); In re Sernaker, 702 F.2d 989, 991, 217 USPQ 1, 3 (Fed. Cir. 1983). Only those arguments actually made by Appellant have been considered in this decision. Arguments which Appellant could have made but chose not to make in the Brief have not been considered and are deemed to be waived (see 37 CFR § 41.37(c)(1)(vii)).

As a general proposition in an appeal involving a rejection under 35 U.S.C. § 103, an Examiner is under a burden to make out a prima facie case of obviousness. If that burden is met, the burden of going forward then shifts to Appellant to overcome the prima facie case with argument and/or evidence. Obviousness is then determined on the basis of the evidence as a whole and the relative persuasiveness of the arguments. See In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992); In re Hedges, 783 F.2d 1038, 1039-40, 228 USPQ 685, 686 (Fed. Cir.

1986); In re Piasecki, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984); and In re Rinehart, 531 F.2d 1048, 1052, 189 USPQ 143, 147 (CCPA 1976).

With respect to independent claim 18, the representative claim for Appellant's first suggested grouping (including claims 18, 21-25, and 28-30), Appellant's arguments (Brief, pages 6-11) in response to the Examiner's 35 U.S.C. § 103(a) rejection assert a failure to establish a prima facie case of obviousness since all of the claimed limitations are not taught or suggested by the applied references. After careful review of the disclosure of the applied Kadosh and Miller references in light of the arguments of record, we are in general agreement with the Examiner's position as stated in the Answer.

In our view, the collective teachings of Kadosh and Miller would have suggested to one of ordinary skill the invention as set forth in representative claim 18. We agree with the Examiner that, although Kadosh discloses a transistor structure with a source extension that is deeper than a drain extension, Miller clearly provides a teaching of a transistor with a deeper drain extension. In addition, as pointed out by the Examiner, Miller

provides a teaching (e.g., column 4, lines 35-43) of the interchangeability of shallower and deeper source and drain extension structures.

We also find to be unpersuasive Appellant's argument that Miller's underdiffusion areas are not source and drain extensions. As pointed out by the Examiner, although Appellant's specification describes the source and drain extensions as being thinner than the deep source and drain regions, there is nothing in the language of claim 18 which requires such structure. In our view, Appellant's arguments improperly attempt to narrow the scope of the claim by implicitly adding disclosed limitations which have no basis in the claim. See In re Morris, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997).

Further, we find no error in the Examiner's establishment of proper motivation for the proposed combination of Kadosh and Miller as articulated at pages 4 and 5 of the Answer. Although Appellant asserts that Kadosh's disclosure of a transistor structure in which the source extension is deeper than the drain extension, i.e., the opposite of what is claimed, "teaches away" from any proposed combination with Miller, we agree with the Examiner (Answer, page 8), that "neglecting to disclose" does not mean "teaching away." Each reference must be read, not in

isolation, but for what it fairly teaches in combination with the prior art as a whole. It is improper to downgrade a reference on the basis that it teaches away, unless it teaches away in the context of the combination of references. In re Keller, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981); In re Merck & Co., Inc., 800 F.2d 1091, 109y, 231 USPQ 375, 380 (Fed. Cir. 1986).

For the above reasons, since it is our opinion that the Examiner's prima facie case of obviousness has not been overcome by any convincing arguments from Appellant, the Examiner's 35 U.S.C. § 103(a) rejection of representative claim 18, as well as claims 21-25, and 28-30, which fall with claim 18, is sustained.

Turning to a consideration of representative independent claim 31, we also sustain the Examiner's 35 U.S.C. § 103(a) rejection, based on the combination of Kadosh and Miller, of this claim, as well as claims 32-35 and 37 which fall with claim 31 according to Appellant's grouping. Although grouped separately by Appellant, the assertions from Appellant rely on

the same argument made with respect to claim 18 that the combination of Kadosh and Miller does not disclose a transistor structure with a drain extension deeper than the source extension, an argument we found to be unpersuasive for all of the reasons discussed supra.[2]

In summary, we have sustained the Examiner's 35 U.S.C. § 103(a) rejection of all of the claims on appeal. Therefore, the decision of the Examiner rejecting claims 18, 21-25, 28-35, and 37 is affirmed.

[2] We also make the observation that, from our own independent review of Miller, it appears that Miller seems to disclose all that is required in independent claims 18 and 31. For example, the transistor structure illustrated in Figure 6 of Miller, includes a gate 28, P+ deep source and drain regions 29 and 27, a source extension U_s integral with the deep source region 29, a drain extension U_d integral with the deep drain region 27, wherein the drain extension is deeper than the source extension.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a)(1)(iv)(effective Sep. 13, 2004; 69 Fed. Reg. 49960 (Aug. 12, 2004); 1286 Off. Gaz. Pat. Office 21 (Sep. 7, 2004)).

AFFIRMED

JOSEPH F. RUGGIERO)
Administrative Patent Judge)
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) BOARD OF PATENT
LANCE LEONARD BARRY)
Administrative Patent Judge) APPEALS AND
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) INTERFERENCES
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STUART S. LEVY)
Administrative Patent Judge)

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JOSEPH N. ZIEBERT
FOLEY & LARDNER
FIRSTAR CENTER
777 EAST WISCONSIN AVE.
MILWAUKEE, WI 53202-5367